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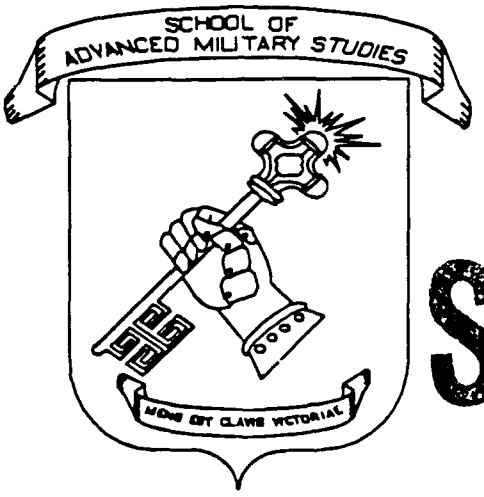
THE COMBAT SUPPORT ROLE IN OPERATIONAL MOVEMENTS: ANOTHER STEP IN LEARNING THE ART OF OPERATIONAL MANEUVER

A Monograph

by

Major Daniel G. Karis
Military Police



School of Advanced Military Studies
United States Army Command and General Staff College
Fort Leavenworth, Kansas

Second Term 88-89

REPORT DOCUMENTATION PAGE

Form Approved
OMB No. 0704-0188

1a. REPORT SECURITY CLASSIFICATION UNCLASSIFIED	1b. RESTRICTIVE MARKINGS
2a. SECURITY CLASSIFICATION AUTHORITY	3. DISTRIBUTION / AVAILABILITY OF REPORT Approved for public release; distribution unlimited.
2b. DECLASSIFICATION / DOWNGRADING SCHEDULE	
4. PERFORMING ORGANIZATION REPORT NUMBER(S)	5. MONITORING ORGANIZATION REPORT NUMBER(S)
6a. NAME OF PERFORMING ORGANIZATION School of Advanced Military Studies, USAC&GSC 6b. OFFICE SYMBOL (If applicable) ATZL-SWV	7a. NAME OF MONITORING ORGANIZATION
6c. ADDRESS (City, State, and ZIP Code) Fort Leavenworth, Kansas 66027	7b. ADDRESS (City, State, and ZIP Code)
8a. NAME OF FUNDING / SPONSORING ORGANIZATION 8b. OFFICE SYMBOL (If applicable)	9. PROCUREMENT INSTRUMENT IDENTIFICATION NUMBER
8c. ADDRESS (City, State, and ZIP Code)	10. SOURCE OF FUNDING NUMBERS PROGRAM ELEMENT NO. / PROJECT NO. / TASK NO. / WORK UNIT ACCESSION NO.

11. TITLE (Include Security Classification)
The Combat Support Role in Operational Movements; Another Step in Learning the Art of Operational Maneuver.

12. PERSONAL AUTHOR(S)
MAJ DANIEL G. KARIS, U.S.A.

13a. TYPE OF REPORT	13b. TIME COVERED	14. DATE OF REPORT (Year, Month, Day)	15. PAGE COUNT
	FROM _____ TO _____	89/05/30	78

16. SUPPLEMENTARY NOTATION

17. COSATI CODES			18. SUBJECT TERMS (Continue on reverse if necessary and identify by block number)
FIELD	GROUP	SUB-GROUP	

19. ABSTRACT (Continue on reverse if necessary and identify by block number)

The principles of AirLand Battle Doctrine reflect the tested theories of war and the past experience of the U.S. Army. A fundamental concern of AirLand Battle Doctrine is the ability of the U.S. Army to conduct maneuver at the operational level of war. The reason for this concern is the complexity of the task and the fact that the future will provide the operational commander with ample opportunity to direct combat power by shifting large forces against enemy weaknesses.

To shift forces and concentrate combat power implies an ability to move. This paper examines the methods used by the Wehrmacht, the Red Army, and the U.S. Army to conduct operational movements during World War II. In reviewing their history we find that each army applied solutions that were remarkably similar. They were alike in that each army emphasized the importance of concentration, the timely employment of reconnaissance, the use of engineers to reinforce the route, the need to maintain communications while on the move,

[Continued on reverse side.

20. DISTRIBUTION / AVAILABILITY OF ABSTRACT	21. ABSTRACT SECURITY CLASSIFICATION	
☒ UNCLASSIFIED/UNLIMITED ☐ SAME AS RPT ☐ DTIC USERS	UNCLASSIFIED	
22a. NAME OF RESPONSIBLE INDIVIDUAL MAJ DANIEL G. KARIS	22b. TELEPHONE (Include Area Code) (913) 684-2138	22c. OFFICE SYMBOL ATZL-SWV

DD Form 1473, JUN 86 *Previous editions are obsolete.* SECURITY CLASSIFICATION OF THIS PAGE

Item 19, continued.

the need for traffic control, and the importance of maintaining unit integrity. In each army, the commander was ultimately responsible for the move. Operational commanders in the German and U.S. Armies designated a special movements and traffic control officer to exercise overall responsibility for the move while the Soviet commander appeared to exercise more centralized control.

The execution of operational movements was different in minor respects because each army's doctrine was based on a different historical heritage. They were alike for two reasons. First their was the military necessity of having to satisfy Clausewitz's principles of speed and concentration. Second, there was the development in the American and Soviet Armies of a common understanding of the German Blitzkrieg. Thus, the research concludes that the lessons of World War II do have contemporary implications. The significance of this study is its effort to analyze the historical scope of combat support to maneuver at the operational level of war.

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Another Step in Learning the Art of Operational Maneuver

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May 30, 1989

SCHOOL OF ADVANCED MILITARY STUDIES

MONOGRAPH APPROVAL

Name of Student: Daniel G. Karis, MAJ, Military Police

Title of Monograph: An Analysis of Combat Support to Operational Maneuver in Europe

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Accepted this 15th day of May 1989

THE COMBAT SUPPORT ROLE IN OPERATIONAL MOVEMENTS ANOTHER STEP IN LEARNING THE ART OF OPERATIONAL MANEUVER

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ANOTHER STEP IN LEARNING THE ART OF OPERATIONAL MANEUVER

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THE COMBAT SUPPORT ROLE IN OPERATIONAL MOVEMENTS

ANOTHER STEP IN LEARNING THE ART OF OPERATIONAL MANEUVER

INTRODUCTION

General William E. DePuy, one of the forebearers of AirLand Battle, stated that, "It is the aim of every commander to concentrate all available combat power against the enemy at just the right time and in just the right place to win battles, campaigns, and wars." [1] This is the tactical, operational, and strategical essence of war. "Combat power is the ability to fight." [2] A prerequisite for the ability to concentrate combat power is an ability to maneuver. On the contemporary battlefield, the synchronization of combat power at just the right time and place mandates that U.S. forces maneuver with an initiative and agility that surpasses what has been achieved in the past.

In the recent past, prior to the introduction of AirLand Battle Doctrine, the ability to maneuver was subordinated to the ability to produce firepower. A commentary of the Viet Nam War was the fact that our attrition strategy sought to destroy the combat power of the enemy by overwhelming firepower. With the exception of the few airmobile and mechanized units, the U.S. Army of the Viet Nam era did not have the ability to pick the time and place of combat, but did enjoy the ability to mass overwhelming firepower whenever the Viet Cong or North Vietnamese chose to fight. In order to care for the welfare of his men, minimize friendly casualties, and spare suffering in an unpopular war, the tactical orientation of the combat arms

officer was on fire, then maneuver. [3] The doctrine was "shoot, move, and communicate" and this was drilled into every infantry officer of those times.

But times change, threats change, technologies change, and doctrine has to evolve in order to keep up with those changes. In the 1980s the greatest threat was viewed as a conflict with the Warsaw Pact countries on the lethal, technologically sophisticated European battlefield. AirLand Battle Doctrine was the response that the U.S. Army developed to answer that and other threats it was faced with. AirLand Battle Doctrine reintroduced the U.S. Army officer to the operational level of war and the fact that a state of movement could be a strength. [4]

An alleged difference between the American officer and the Soviet officer was that the American moves between fights, while the Russian fights between moves. For the Soviet officer fighting was not an end in itself, but rather a continuation of purposeful movement toward an ultimate goal. [5] The Soviets developed this approach toward operational art from their scientific study of the German Blitzkrieg during World War II. There are a number of reasons why the Germans lost World War II, but high among them is the fact that the Russians, and then the Americans, learned the techniques employed in Blitzkrieg and used them against the Germans. [6] World War II found both the Americans and the Russians studying the battle tested ideas of the German Wehrmacht.

Similar to the evolution of doctrine in World War II, "the principles of AirLand Battle doctrine reflect past usages in the U.S. Army and the tested ideas of past and modern theorists of war." [7] A fundamental concern of AirLand Battle Doctrine is the ability of the U.S. Army to

conduct large unit maneuver at the operational level of war. The reason for this con[illegible] is the complexity of the task and the fact that the future will provide the operational commander with ample opportunity to direct combat power by shifting large forces against enemy weaknesses. [8] To focus this combat power at the right time and place will require the synchronization of effort. This synchronization will be a reflection of the quality of assistance that the combat support elements render the movement. The combat support functions that would be involved in such a move include command and traffic control, communications, intelligence and reconnaissance, route preparation, and air defense. [9]

The purpose of this paper is to determine the contemporary implications of the combat support functions employed during operational movements in World War II. This will be accomplished by first examining the theoretical and doctrinal foundations of operational maneuver. This preliminary review serves as the basis to explore how combat support was used to conduct operational movements by the German Army, the Soviet Red Army, and the U.S. Army. The conclusion will review the major similarities and the differences between the three armies in this regard.

The criteria for determining success will be whether or not there were lessons learned in World War II which have contemporary implications. Historical lessons will be reviewed in light of the contemporary implications of combat support and operational maneuver. The significance of this study is its effort to analyze the historical scope of combat support to maneuver at the operational level of war.

THEORY AND DOCTRINE

Renewed interest in the operational level of war has surfaced since the introduction of AirLand Battle doctrine. The operational level is that level of war between strategy and tactics. Strategy is the "art and science of employing the armed forces of a nation or alliance to secure policy objectives by the application or threat of force." [10]. Tactics is the concentration of fires, the disposition to combine fire and movement, displacements to produce fire effect, and the use of force successively. [11] While the tactical commander applies the combat power made available to him in battles and engagements, the operational commander is more concerned with concentrating forces to gain a tactical advantage or exploit a tactical action. [12] At the operational level of war, the commander moves and concentrates units in order to set the terms of battle. [13]

Movement is a physical state of motion in any direction. for any purpose, by a force of any size. [14] Movement becomes maneuver when it is made in relation to the enemy in order to gain or retain a positional advantage. [15] To be specific, operational maneuver is the movement of field forces before, during, and after major battles or phases in a land campaign in order to obtain a positional advantage at the decisive point over the enemy. [16] These forces may be large or small: this paper deals with large theater forces -- divisions, corps, and armies.

The theoretician, Baron Henri de Jomini, suggests that success in battle depends upon the skillful moving of great masses of troops at the proper moment upon the decisive point. [17] Clausewitz states that maneuver consists of two pairs of opposites. "The first pair of opposites consists of

outflanking the enemy or of operating on interior lines; the second, of concentrating one's forces or of extending them over numerous posts." [18] Clausewitz, who was disdainful of "principles of war," nevertheless identified speed and concentration as being fundamental to all planning and serving as a guide for all other considerations in war. [19]

J.F.C. Fuller, a progenitor of Blitzkrieg, stated that, "In war the object of a commander is to accomplish victory at the smallest possible cost and loss, and the means whereby he attains his objective in the field is by developing mobility through protected offensive power." [20] Protection is the element of combat power concerned with the conservation of a force's fighting potential so that it can be applied at the decisive time and place. [21] Protection is directly concerned with maintaining the will to fight and is a moral element of war.

Napoleon said that the moral is to the physical as three is to one. [22] Napoleon's pronouncement that the moral aspects of war are important was also identified by Sun Tzu in 500 B.C., "when troops gain a favorable situation the coward is brave; if it be lost, the brave become cowards." [23] Sun Tzu also identified an earlier impact of combat support on maneuver, "Those who do not know the conditions of mountains and forests, hazardous defiles, marshes and swamps, cannot conduct the march of an army; those who do not use local guides are unable to obtain the advantages of the ground." [24]

What was true 2,500 years ago is fundamentally true today. The conduct of present day operational movements requires plans that use appropriate maps, good quality roads, and effective techniques for passing through other formations, for moving at night, for providing combat service support, for

security, and for deception. [25] Combat support provides leverage to enhance the effectiveness of friendly forces to coordinate their employment in time, space, and mission. [26] The combat support required for the coordination of an operational move normally includes military police traffic control teams, engineer road repair teams, air defense artillery units, route and NBC reconnaissance teams, security teams, signal posts, and highway regulating teams. [27] Their skillful employment will greatly ease the conduct of an operational movement.

Understanding operational movements is also facilitated by an appreciation of the military theory pertaining to operational maneuver, but only with a word of caution. Theory does not solve specific military problems, but rather it sheds light on those problems, and will assist those in authority to make sound decisions. [28] As Clausewitz stated, "all theories...must stick to categories of phenomena and can never take account of a truly unique case; this must be left to judgement and talent." [29] To guide judgement in the conduct of operations effectively, an army has to develop doctrine.

Doctrine expresses an army's approach to fighting campaigns, major operations, battles, and engagements. [30] Doctrine is dynamic. It evolves over time, it is based on theory and experience, and it will vary among different armies. AirLand Battle doctrine states that the object of operational maneuver is to concentrate forces in order to rapidly gain superiority in combat power at the decisive time and place. [31]

Another word of caution is in order. AirLand Battle doctrine advises against designating a particular level of command, such as a corps or a division, as being operational. The reason for this is that different sized

forces will be employed in different theaters of operations. However, corps and independent divisions have been considered fundamental units of operational maneuver in the past, and this serves our purpose for examining combat support to operational maneuver in World War II. [32]

WORLD WAR II - THE GERMAN EXPERIENCE

World War II witnessed the armored spearheads of the German Wehrmacht slash through the numerically superior armies of Europe with relative ease and speed. It was a new application of a classic military theory -- Napoleon's concept of marching separately and striking together. This rapid, elastic concentration of forces in time and space was the lightning warfare known as Blitzkrieg. [33] (See enclosure 1, the Blitz Transport Plan) The doctrine of Blitzkrieg emphasized the indirect approach, capitalizing on the ability of armored forces to concentrate quickly and strike hard where least expected. [34] As an operational concept it gave the Wehrmacht the ability to fight outnumbered and win. [35]

The Wehrmacht had clearly recognized the operational level of war prior to the start of World War II. Writing in the 1920's, Baron Hugo von Freytag-Loringhoven stated that the German General Staff had replaced the term strategisch with the term operativ when describing military operations and clearly differentiated between operativ and what he referred to as taktisch. [36]

Writing after the war, General von Senger und Etterlin considered that German corps and divisional size units fought at the operational level of

war. He stated, "German operational mobility at divisional and corps level led not only to the victories of the blitzkriegs but likewise to the German Army's success in keeping the superior Soviet Army off German soil for nearly four years." [37]

At the operational level, the Wehrmacht was organized into army groups, armies, corps, and divisions. Divisions were the largest units in the German Army which had a prescribed organization. [38] (See enclosure 2, the Panzer Division "Hermann Goering" Organization) Considering the combat power demonstrated by these divisions, the assertion they were an operational level force may not be unreasonable. Colonel Trevor N. Dupuy found that throughout World War II, the German ground forces regularly inflicted casualties at a 50% higher rate than the opposing British and American units and at a 300% higher rate then the opposing Russian units. He determined that one German division was a match for at least three Russian divisions of comparable size and firepower. [39]

The German Army firmly established its doctrine for operational maneuver in World War II. This doctrine "avoided giving detailed directions and confined itself to conventional principles which applied to all arms and services." [40] Command responsibilities were satisfied by issuing broad directives which gave freedom of action to subordinate commanders. Emphasis was placed on command-leadership and not control-management. [41] The movement directives issued by higher commanders were broad in scope and included order of march and traffic control measures.

Overall responsibility for the control of marches and the regulation of traffic rested with the commander. He generally marched near the head of the main body and organized the march column for security purposes by dividing

it into an advance guard (Vorhut), main body (Gros), and rear guard (Nachut). On the march, each front-line division, whether motorized or armored, was given either an all-weather road or a designated sector of advance. When a German corps or division was engaged in combat, it was almost always reinforced by units from its General Headquarters. When a General Headquarters or other unit was to use the same route at the same time as a particular division, they were subordinated to the division which controlled the route for the duration of the move. [42] The only exception to this was when the terrain included forests or swamps. Then the senior command would not allow its non-divisional units to move forward until the last elements of the division had cleared a predesignated phase line. The units would then proceed in close formation strictly observing road intervals between vehicles and their assigned rate of march. [43]

Time and space requirements were carefully calculated to prevent traffic congestion and disruption. [44] A German motorized division could maintain an average daily march of between 90 and 150 miles while an armored division achieved between 60 to 90 miles a day. [45] March itineraries, Aufmarschse, and march tables, Aufmarschgraphikon, were used to integrate and schedule the movement of large units. [46] Accuracy was considered critical. The failure to precisely compute time and space requirements or to consider the impact of the march on men and materiel would adversely affect the implementation of tactical plans.

To ensure compliance with the march itineraries, a traffic echelon was established as part of the transport plan. [47] (See enclosure 3, the Blitz Transport Plan: Detail) Military traffic was controlled both by unit march discipline and external traffic control. [48] Traffic control personnel

wore red-orange brassards and military police, Feldgendarmerie, involved in traffic control were distinguished by metal gorgets. [49] Traffic control was enhanced by friendly air observation of the march column. Air observers would report the location of traffic congestions, any unusually prolonged halts, the crossing of phase lines by the various units, and the over-all progress of the movement. [50]

Traffic control was further enhanced by the appointment of a special traffic control officer, the Stabsoffizier fuer Marschueberwachung, commonly called the Stoma. This officer was the staff point of contact for the coordination of traffic planning and was granted both judicial and executive authority. [51] The Stoma would be briefed by the commander on his intent and overall plan. The Stoma was then granted full authority to handle the traffic control situation to support the plan however he saw fit. [52] The Stoma was responsible for the even and uninterrupted flow of the movement, for route marking, road maintenance, vehicle recovery, and rerouting. In order to enforce strict traffic discipline and to prevent any column or single vehicle from moving in the opposite direction, he was given special authority within the scope of his assignment. Even officers of higher rank had to follow his instructions. [53]

As campaigns continued and the experience of German field commanders increased, they recognized the continuing importance of traffic control to operations and appointed a permanent special staff section for highway traffic control. This section, commonly referred as the G-3/Traffic Regulation and Control Office (TRACO), was responsible for rapidly adjusting the standing operating procedures to the changing combat conditions. During a movement, the TRACO exercised temporary jurisdiction over all the various

type troops that were involved in completing the movement. This included military police, motorcycle messengers, interpreters, supply personnel, signal troops, engineers, scouts, medical personnel, and other combat support elements. The TRACO was the sole responsible agency for the distribution and employment of all personnel assigned traffic functions. [54]

To accomplish an operational movement, adequate communications had to be provided between headquarters elements, traffic control, and towing details. [55] Before a march would begin, a trunk telephone line would be extended as far forward as possible. A signal unit would be designated to march with the advance guard in order to establish necessary wire communications at key points. If the march was along several roads, the trunk line would be laid along the route of the division commander. In addition to the trunk line, the German commander would communicate using radios and messengers. Messengers, depending on the type of terrain, unit, or movement, were mounted on horses, bicycles, or motorcycles. [56] German commanders did not rely on lengthy, typewritten operations orders to implement a move. Orders were generally given face-to-face during discussions between field commanders or brief messages were sent out over the radio. [57]

To support a large scale movement, German commanders would conduct a reconnaissance, which covered a large area in great depth to obtain the information required. Tasks performed by the reconnaissance included determining the location and activities of enemy forces, the location of rail concentrations, lines of communication, loading and unloading areas for army elements, and the construction of field and permanent fortifications.

This reconnaissance was carried out in two phases. The first phase was an aerial reconnaissance. Aerial observation and aerial photography were preliminary measures conducted along important roads and railroads. The second phase was conducted by the advance guard. It would be given a general direction in which to proceed and objectives to recon. [58] It would then report the presence of mines, roadblocks, and other obstacles, and the estimated time required for their removal, as well as possible detours around impassable or obstructed stretches of road. [59]

All advance detachments were accompanied by an engineer echelon which repaired the worst stretches of road and placed out road and terrain markers to aid in orientation. [60] The engineer echelon would also support the movement by testing and repairing bridges, constructing bypasses around road craters, and repairing roads damaged by enemy action or the advancing traffic. [61] At an early stage of the movement, construction units would work along the entire route, performing road maintenance and constructing bypasses, bridges, and corduroy roads. In addition, a highly mobile engineer unit was held in reserve to cope with special emergencies. [62]

Of greater concern to the Germans than route maintenance was air defense. As the Germans lost air superiority, they had to concern themselves with antiaircraft protective measures. To cope with the air threat the Germans marched at night or in open columns, Fliegermarschtiefe, so as to benefit from the protection of dispersion. Antiaircraft defense units were concentrated on key terrain features, providing protection to bridges, crossroads, and defiles. [63]

Allied air supremacy mandated that the Germans conduct movements only at night and without lights. Commanders were instructed to leave burned out

vehicles on the road in order to attract allied pilots into wasting strafing and bombing runs. [64] Night movements exacerbated road capacity and increased movement times. The requirement for constant low-gear operations increased vehicle unserviceability rates and fuel consumption and considerably lowered the tonnage which could be moved. [65] Field expedients had to be used to overcome the problems involved in the movement of large forces. [66] To aid succeeding units in finding their way, directions were indicated by the use of marking tape, luminous paint, and tree and road markers. To provide orientation at night, vertical searchlight beams and even the firing of tracer ammunition proved satisfactory. [67]

Based on their accomplishments, the German ground forces were effective in conducting operational movements in World War II. To summarize, the essence of German Blitzkrieg was the ability to concentrate forces quickly and to strike hard. The responsibility for the concentration and movement of operational forces rested with the German commander. To assist him, he appointed a special traffic control officer, the Stoma, and gave him judicial and executive authority to execute the movement within the given intent. Traffic control was of decisive importance to the movement of operational level forces and march discipline was essential for the speedy and proper concentration of large formations. A traffic echelon to control the march and an engineer echelon to reinforce the route were an established part of these formations.

Careful planning before a movement greatly facilitated traffic control. Time and space requirements were precisely calculated to prevent congestion and disruption. Prior operational reconnaissance was conducted to obtain needed information and identify critical points that required surveillance

and protection. Obstacles were removed and the route reinforced by the engineer echelon and trunk telephone lines were employed by signal personnel to effect communications. Enroute communications were facilitated by messengers and by radio, if listening silence was not imposed. The lack of air superiority made night movements the norm and innovation was encouraged in order to cope with any unforeseen circumstances.

German traffic control was tested during the protracted battles of World War II, especially against the Soviets on the Eastern front. German experience substantiated the fact that the integration of traffic control with engineer, signal, and antiaircraft units was of vital importance to the conduct of operational maneuver. Despite shortfalls in both men and equipment, the German Army was able to fight outnumbered against the Red Army successfully for years longer than what might have been expected.

WORLD WAR II - THE RUSSIAN EXPERIENCE

World War II found the Soviet Red Army unprepared to conduct battle against the Wehrmacht at the operational level. The years 1937-38 witnessed the execution of a generation of Soviet military leaders during the Stalin purges. Tukhachevskiy, Svechin, Uborovich, Kamenev and other theorists of operational art and deep battle were eliminated. Their demise was followed by a neglect of the operational art as their successors were hesitant to express new ideas in the repressive climate of the times. This neglect cost the Russian people dearly during the early years of World War II as the German Blitzkrieg made its way to the gates of Moscow. [68]

In the wake of the Blitzkrieg, the Stavka, the Soviet Headquarters of the High Command, had to reform military thinking within the ranks while at the same time prosecuting a war. It accomplished this task by issuing directives pertaining to the proper use of forces at the operational level of war. On 10 January 1942, the Stavka issued Directive No. 3 which ordered the concentration of forces and the use of shock groups to achieve success in offensive operations. On 16 October 1942, Stavka issued Order No. 325 which established the guidelines for the newly formed tank forces and covered "the operational use of tank and mechanized corps." [69]

The operational practices developed and used by the Soviets during World War II found "full theoretical expression in the orders, directives, and instructions of the Stavka." [70] The Soviets defined the term operatsiya as, "the sum of a series of battles, engagements and maneuvers which are integrated as to aim, objectives, place and time, which are conducted simultaneously and successively, and which follow a single concept and plan." [71] The Soviets divided the study of military art into three levels -- strategy, operational art, and tactics. Strategy develops from the study of military doctrine, past military experience, and an analysis of the contemporary political, military, and economic conditions. [72] Strategy is considered the most important part of military art and determines the nature of operations. [73]

Operational art stems from strategy and determines the methods that will be used to prepare for and conduct the operations which will achieve the strategic aims. Operational art is in turn used as the basis for the development of tactics. [74] To the Soviet, operational art is concerned with the theory and practice of preparing for and conducting combined and

independent operations by major field forces (fronts and armies) or major formations of services. [75] The front is a Soviet wartime organization which has no U.S. equivalent while an army consists of from three to five divisions and various combat support and service support elements. [76] At the operational level of war, the Soviets use two concepts to differentiate the scale of importance of operations between strategy and tactics. Operativno-strategicheskiy describes the operations of front sized troop formations. Operativno-taktícheskiy is used to describe the operations of troop formations the size of armies or corps. [77]

The Russian word for mobility is manevrennost. It describes the operational-tactical property of formations that "characterizes their degree of movability and their ability to quickly change their location, to deploy for battle (or an operation), and to execute maneuvers in the course of combat operations." [78] Mobilnost, meaning mobility and its implied flexibility, allows the Soviets to achieve one of the principles of operational art derived from their Great Patriotic War -- "the concentration of main efforts and the creation of superiority in forces and means at the decisive place and decisive times." [79]

In order to concentrate troops, shift the main effort, and achieve the desired correlation of forces, troops and equipment had to be moved. The basic method of movement was the march. [80] (See enclosure 4, the Soviet Troop March Formation) According to Major General I. Krupchenko,

> The experience of the Great Patriotic War has shown that most frequently marches were made by formations of tank and mechanized troops which comprised the main attack and maneuvering force of the Ground Forces. There was virtually not a single offensive or defensive operation during the preparation or in the course of which the tank (mechanized) corps and brigades did not move over a distance of 100 and more kilometers. [81]

The primary movement technique used by the Soviets was the column formation at a given speed and density. [82] (See enclosures 5 through 7, the VIII Mechanized Corp, the 13th Tank Corps, and the 2nd Guards Tank Army) In this march formation, the troops would move under their own power either aboard organic equipment or by foot and retain their organizational integrity. [83] The governing assumption of any movement in column formation was that contact with the enemy was possible. [84]

As previously stated, orders, directives, regulations, standards, and norms governed Soviet movements. For example, the Red Army Field Regulations of 1944, published by the Soviet General Staff, required that all movements to concentration areas take place only at night and that concentration areas provide a concealed location 25 to 30 kilometers from the anticipated breakthrough sector. [85] Battle regulations specified rules and had the force of law, which is in contrast to U.S. field manuals which merely offer guidance. [86]

Standards which have the force and authority of regulations were called normativy, or norms. The use of statistical norms was a common practice for the Russian General Staff with mathematical calculations being used as the basis for planning since the mid-19th century. [87] The applicability of a norm to a specific plan would depend on the situation, with typical movement norms being related to both frontage norms and depth norms. [88]

During World War II, the Soviets demonstrated that the success of a march was dependent upon careful planning and organization. But as a general rule, Soviet corps commanders only had a limited amount of time to complete their plans, varying from several hours to a day. Under these circumstances the corps commander would designate "the march formation, the time for

passing the starting line and the report lines, the probable line (area) of encountering the enemy, and designated measures to organize troop control of the march." [89]

If adequate time was available, the corps commander, key subordinate commanders and staff personnel would conduct a personal reconnaissance. Dressed in ordinary soldiers' uniforms and without insignia of rank, they would take a first hand look at the terrain. [90] Otherwise, a map reconnaissance would have to do. [91] At the beginning of the war, corps commanders would pass instructions to subordinate commanders by written operations orders. As they gained experience, the Soviets realized that timeliness was of greater importance. From then on, key orders were transmitted orally, with written confirmation following. [92]

The Soviets placed great emphasis on maintaining centralized control of movements. They did not favor the use of routes to capacity or the use of small unit road infiltration techniques for either operational or tactical moves if done at the expense of control. The principle of the Soviet system was to keep each level in a column formation for as long as possible. [93] This maximized the degree of control over the movement.

Movements were regulated by traffic control posts set out in front of the main body by the advanced party. Control posts were often manned by specially trained traffic regulator troops in distinctive black uniforms with white reflectorized cross belts. [94] Traffic control posts would be established every 6 to 8 kilometers, with one in four being responsible for sector control. These two and three man checkpoints were always placed at start points, rest areas, major intersections, bridges, release points and assembly areas. [95] Control posts regulated marches by controlling their

direction, order, rate of march, and the interval between units. [96]

Each tank or mechanized corps would be designated a primary, all-vehicle route and organized into a single march column in several echelons. If contact with the enemy was unlikely, then wheeled and tracked vehicles would be inter- mixed with the wheeled vehicles leading the march. The column length for a corps in this configuration would be from 60 to 70 kilometers. If enemy contact was likely, a forward detachment would be dispatched to seize key terrain along the route and act as security for the main body. [97]

Movements were coordinated through march discipline, halts, and rest periods. Short halts of 20 to 30 minutes were planned at the end of every 2 or 3 hours. Long halts of about 1 to 2 hours would be called after 5 to 6 hours on the road. Longer halts would be called on marches of over 24 hours duration. [98] The norm for troop movements during the Great Patriotic War was to march at night, spending 6 to 8 and sometimes from 10 to 12 hours travelling. The average travelling speed on a highway was 15 to 20 kilometers per hour at night and 20 to 30 kilometers per hour during the day. [99]

In the latter stages of the war, a typical Soviet corps would conduct a long distance march at night, have the traces of its tank tracks erased, and hide in forested assembly areas during the day. Prior patrol searches of the assembly areas would have cleared any enemy reconnaissance elements and an exclusion zone, sometimes as large as 25 kilometers, would be established from which the local population was evacuated. [100] Coordination instructions for long distance marches were usually given to subordinate units for the first day's march and for a day at a time on each subsequent

day. [101]

Cooperation between neighboring units was maintained by a mutual exchange of combat documents, tables, and maps, and personal contact between commanders. To coordinate the march, the commander moved at the head of the column of the main body with a select group of staff officers comprising his operational group. [102] The remainder of the staff would follow by echelon. A portion of the staff would direct the traffic control service and monitor the execution of the march plan. If contact with the enemy was unlikely, the staff would precede the column and move to the concentration area beforehand. [103]

Russian staff studies of World War II discovered that up to 70 percent of the most reliable intelligence obtained by the Germans resulted from the interception of Soviet tactical radio communications. [104] Radios were used on the march to transmit messages even when radio resources and frequencies were limited. Special nets with their own frequencies and stations were specifically reserved for movement control operations from regiment upwards. [105]

Besides radio, other means of communication used in the course of a march included liaison aircraft, motorcycles, and cross country vehicles. Radio provided the greatest degree of flexibility and agility in a rapidly changing situation but often compromised operations. As Soviet staff studies pointed out, radio listening silence was one way to maintain the operational security of the force. [106] March security can be enhanced by reducing the use of radios to the absolute minimum, either by imposing listening silence or disconnecting the microphones from the transmitters. [107]

March security was also enhanced by the conduct of an operational

reconnaissance. The corps commander and his staff played a direct role in the conduct of the reconnaissance and made extensive use of aircraft to obtain data. [108] Likewise, ground reconnaissance of up to battalion or even brigade strength would be conducted of any intermediate areas enroute to the concentration area. These areas would be used by the main body to provide concealment, a place to top-off vehicles and conduct repairs prior to reaching the line of commitment. [109] Battalions conducting the reconnaissance would be out anywhere from 20 to 40 kilometers ahead of the main body it was protecting. [110]

The premium which the Red Army placed on reconnaissance is witnessed by the amount of assets that they dedicated to this function. As V. G. Reznichenko points out,

> For reconnaissance purposes during the Great Patriotic War, observers were assigned and reconnaissance forces, reconnaissance parties, independent reconnaissance patrols, engineer and chemical warfare reconnaissance patrols, scout vehicles and foot patrols were dispatched from formations, units, and subunits on the march. [111]

Forward detachments of up to brigade strength were responsible for conducting reconnaissance and securing key terrain until the arrival of the main body. [112] Particular attention was paid to water obstacles in order to determine what type of crossing equipment would be required and to secure crossing sites if possible. [113] Whenever possible, water obstacles were breached on the move. [114]

The Red Army continually faced problems of time and space. To overcome the vast expanses of the Eastern Front in a timely manner and to contend with a primitive transportation network, frequent river barriers, and other physical obstacles, the Soviets adopted the rule that control and tasking of

engineer troops would be centralized [114] The lead engineer element in a march formation was the Otryad Obespecheniya Dvizheniya (OOD) or Movement Support Detachments. These detachments followed behind the lead reconnaissance elements and rapidly cleared the route of any obstacles so that the march would continue unobstructed. [115]

Based on the situation, temporary engineer units, called head road detachments, would be organized from various units and made responsible for the road and traffic support of mobile groups. These detachments were assigned between 25-30 vehicles and had enough mobility to keep up with the units they were supporting. They consisted of 200 to 240 men and included a bridge building company, one or two traffic control platoons, a road platoon, and a security platoon. The detachment performed road support duties on those sections of road where the traffic was heaviest. [116]

In the course of an operation, the local population was utilized for preparing and maintaining the roads, thus freeing combat engineer battalions to be employed on other missions. The local population was also involved in the work of rebuilding, strengthening and repairing bridges on the roads. [117] Other engineer support provided to march columns included the building, equipping, and camouflaging of day and night rest areas and troop assembly areas. [118]

The Red Army's struggle with the German Luftwaffe during the early stages of World War II was a painful experience. [119] To counteract the threat that the Luftwaffe presented to its units in march formation, the Soviets established various air defense measures. These measures included the organization of air observation systems, warning systems, and air

defense fire plans for antiaircraft artillery weapons and small arms fire. [120]

Column cover for the march was planned in advance and included the employment of organic antiaircraft weapons and the air defense weapons provided by higher headquarters. [121] Small-caliber antiaircraft weapons travelled at the head of the column while heavy-caliber antiaircraft weapons were used to cover river crossings and assembly areas. On occasion, fighter escorts would be provided to cover an operational move. [122]

Much that the Soviets learned concerning operational maneuver during World War II came the hard way. In brief, the 1937-38 Stalin purges created a serious deficiency in military leadership and adversely affected the Soviets' ability to execute war at the operational level. To overcome this deficiency, the Stavka directed that operational art be implemented in the field. The operational orientation taken by the Stavka was greatly influenced by their study of the Wehrmacht's blitzkrieg.

The Soviets viewed maneuver at the operational-tactical level as a substantial element of combat value. Troops were concentrated, main efforts shifted, and correlation of forces were obtained by operational maneuver. Success depended on careful planning and organization despite the fact that on occasion advance warning of a move was often limited to a few hours.

The Red Army, faced with the vastness of the Eastern Front, used combat support functions to minimize the impact of time and space on operations. A premium was placed on reconnaissance, command and control, and engineer functions. To eliminate wasted time and effort, commanders conducted reconnaissances using maps, reconnaissance forces, engineers, and chemical forces. Centralized command and control gave greater overall direction for

operations and was emphasized over decentralization or innovation. Likewise, scarce engineer assets were also centrally controlled. The efforts of Soviet engineers to maintain the road network were supplemented by local labor whenever possible.

Traffic control posts were used to regulate movements. A portion of the commander's staff would direct the traffic regulators and monitor the execution of the march plan. Due to a concern for secrecy and the threat of enemy airpower, Soviet movements were largely completed at night. To neutralize the Luftwaffe, the Soviets established various air defense measures and had antiaircraft artillery travel with the column and secure key terrain. Centralization and the lack of delegation were the hallmark of the Soviet command and control approach to operational movement.

Learning the conduct of operational maneuver in the midst of the most costly war in history was a supreme challenge for the Soviet Red Army. What it accomplished has become a part of its military tradition and the foundation of its doctrine. While the American officer moves between fights, the Soviet officer fights between moves.

WORLD WAR II - THE U.S. ARMY IN THE EUROPEAN THEATER OF WAR

The spectacle of German Panzer divisions rolling across Western Europe instilled a belief in certain segments of the U.S. Army that the new technology of war would demand a variety of specialized divisions that were tailored to both the specific theater of war and the employment of a particular weapons system. But the officer in charge of designing the army's

force structure, GEN Lesley J. McNair (Commander, Army Ground Forces) was skeptical about specialized units and decided that a combined arms approach was the best course of action. The individual combat arms (infantry, armor, and artillery) were given a considerable degree of autonomy in the development of their doctrine and tactics, but they would fight in combat as a combined arms team. [123]

From McNair's perspective, the primary value of armored units was in the pursuit or exploitation. But as Russell Weigley points out,

> The war proved to be much more a war of the old infantry-artillery team than the German campaigns of 1939 and 1940 had suggested. Once good antitank weapons had been developed and their tactics well planned, tanks alone could not force a breakthrough. What they could do well was to join tactical aviation in cooperating with the infantry as a sort of superartillery. [124]

The U.S. Army corps in the European Theater of War usually consisted of one armored division, two infantry divisions, and a pool of nondivisional combat support and combat service support units. [125] GEN McNair felt that this mix would give army units both the flexibility and power needed to conduct maneuver warfare on the fluid European battlefield. [126] The corps was a combat entity only. Unlike the field armies to which it was assigned, the corps was not an administrative agency. The main focus of the corps commander was to give "unity of direction and continuity of purpose to a mass of units in combat." [127]

During the inter-war years, the U.S. Army's doctrine did not clearly recognize the operational level of war as such. But this does not mean to imply that the study of large unit operations was not conducted. The study of operational movements, the movement by marching army, corps, and division sized units, and the conduct of maneuvers were an essential part of the

curriculum at both the Army War College and the Command and General Staff School. As MAJ Peter S. Kindsvatter points out in his research, "The CGSS graduates of the 1930's were thus able, during World War II, to draw from their educational backgrounds sufficient expertise in moving large units to be able to make such movements, and the operational successes that are dependent upon such movement, happen." [128]

What the U.S. Army's doctrine did was to clearly establish the policies and procedures for the maneuver of large units (armies, corps, and divisions) on the battlefield. Although field service regulations were published with the caveat that set rules and methods must be avoided, they did serve to provide information and give guidance on the conduct of movements and concentrations by operational level commanders. [129] The concentration of superior forces was considered necessary to achieve the ultimate objective of all military operations, the destruction of the enemy's armed forces in battle. To quote from the 1941 edition of FM 100-5, Operations, "Concentration of superior forces, both on the ground and in the air, at the decisive place and time and their employment in a decisive direction, creates the conditions essential to victory." [130]

The concentration of forces was a major focus in the U.S. Army's large unit doctrine. Concentration was the movement and assembly of designated forces into areas from which operations of that assembled force could begin. [141] Basically it was the unification of forces in time and space. To achieve the concentration of large forces, direct control had to be maintained. The orderly and uninterrupted movement into and out of concentration areas required the timely establishment of controlling command posts, the early arrival of the forward echelons, and the development of an

adequate signal communications system. Large troop movements also required staff work of a high order as well as an efficient traffic control system. [131]

Troop movements into concentration areas were made by marching, by rail, motor, or air transport, or a combination of these methods. The means employed were determined by the location of the units to be concentrated, the availability of transport, time and space considerations, the possibility of enemy interference, and the desires of the higher commander. [132]

The arrival of units into concentration areas was sequenced, with control elements arriving early. The sequence of arrival was affected by a number of factors. If the concentration areas were secure and time was not pressing, then the order of arrival was governed largely by convenience. If they were unsecure, then reconnaissance and security elements would have to arrive first. These elements included cavalry, armor, antiaircraft artillery, tank destroyers, engineers, and other mobile ground elements with supporting air force assets. If operations were to be initiated before all elements could be concentrated, then the units needed for the initial phase of the operation would arrive right behind the reconnaissance and security elements. [133]

Emphasis was placed on the fact that combat elements had to be concentrated as complete units rather than piecemeal. With service elements the concern was that they arrive early enough to perform their tasks effectively. It was acceptable for them to be brought in by echelon. [134] Unless it was part of a deception operation, the movement would be executed so that the enemy was kept ignorant about the location of the concentration

areas and the massing of the forces. [135] In order to secure the march column against enemy ground attacks, the column would be divided into an advance guard, main body, and rear guard. [136] Flank guards would also be used. [137]

Post war analysis revealed that movements of army units in Europe were highly efficient and little affected by enemy action. [138] One reason for this was that control over all traffic movements was generally exercised by a central authority at division, corps, and field army levels. Although none was authorized under the Table of Organization and Equipment manning documents, the General Staff would appoint an officer as the Movement and Traffic Control Officer (MTCO). Operating under policies established by the G-3 and the G-4, and assisted by the Provost Marshal and Engineer, the MTCO was the absolute "dictator of the roads." [139]

The Movement and Traffic Control Officer would establish the rules of the road and emplace Traffic Control Posts (TCPs) to enforce them. Located at critical points, such as crossroads, bridges, and unit boundaries, each of the TCPs was in direct telephone communication with the MTCO. [140] These TCPs regulated movements, checked and recorded convoys, and supervised scheduled and unscheduled cross-traffic movement. They also served as refuel stops, maintenance points for the conduct of emergency repairs, and areas where drivers would be given a brief rest, additional instructions, and rations. [141]

In the combat zone, the TCPs were generally manned by combat MPs. Distinguished by their military police brassards, white gloves, and luminous clip buttons, their primary duty was to keep the traffic moving in accordance with the tactical requirements. [142] Bad weather, poor roads

and traffic snarls could have such an adverse affect on movements that on occasion senior officers, such as GEN George S. Patton and GEN Bruce C. Clark, found themselves acting as military traffic policemen at TCPs. [143] As one field grade officer noted, every officer on the road had to be a self-appointed MP. [144]

The techniques used by the Americans to move large units were effective. During the Battle of the Bulge, GEN Patton's Third Army reacted to the German attack by moving three divisions, a corps headquarters, and supporting army level assets, including artillery, air defense, engineer, and support units, over 100 miles in just four days. [145] The 87th Infantry Division moved 125 miles overnight and then went straight into action. [146]

Effective radio and telephone communications were essential to maintain control over the march columns. During the Battle of the Bulge, Third Army did this by designating an axis along which the communications network would be installed. This communications axis mirrored the line of operations between Third Army Headquarters in Luxembourg City, Luxembourg and the objective Bastogne, Belgium. [147] Vehicular radios were the primary means of communication during these marches. The U.S. Army's extensive use of radio traffic provided the Germans with good intelligence but this must be balanced against the speed and certainty with which the American columns moved. [148] Messages were also passed by jeep, motorcycle, and liaison aircraft. [149]

Signal reconnaissance was conducted to locate existing communication facilities, road reconnaissance was conducted by the engineers, and the military police conducted the reconnaissance of traffic control

requirements. [150] Constant and intensive reconnaissance throughout the concentration was doctrinally essential and made good sense. Accurate information was the best form of security. [151] To achieve this the G-3 would initially do a map reconnaissance to select the tentative routes and then dispatch a route reconnaissance party to physically check the ground. The route reconnaissance party evaluated the road conditions, bridging, fords, obstacles, defiles, suitable locations for traffic control points, turn-around points, assembly areas, and other key terrain features. [152] Routes had to be marked prior to the commencement of the march and obstacles had to be removed. [153]

Movements in Europe were complicated by wartime damage and destruction. From the outset it was almost impossible to determine how much traffic might be handled in a given area. Movements could not be planned based on past performance or doctrinal movement tables alone. The estimate of highway capacity was never free from the uncertainty of the changing tactical situation. [154] Engineer reconnaissance of routes used for major movements was essential. Based on the route reconnaissance and time available, bridges were strengthened, obstacles removed, snow posts were established, and other road work to facilitate the move was completed.

The U.S. Army's struggle with the terrain was eased somewhat by the fact that the Allies had overwhelming air superiority. This air superiority made an integrated air defense system relatively unimportant and antiaircraft units were dispersed in small detachments and used in ground fire support roles when their particular expertise was not in demand. Some antiaircraft units were even deactivated in order to provide replacements for infantry units. [155] Thus, air superiority freed the U.S. Army from

many of the restrictions which inhibited German and Russian movements, such as having to travel at night and under blackout conditions.

The operational methods employed by the U.S. Army during World War II were largely responsible for the series of victories that resulted in obtaining the ultimate objective of winning the war. Although the U.S. Army did not clearly recognize the operational level of war during the inter-war years, its World War II officer corps was well versed in the art of moving large units. The concentration of superior force was considered key to the achievement of the ultimate objective and the combined arms approach maximized the synergism between the various forces. The concentration of operational level forces in combat called for direct control and uninterrupted movement. A number of operational level units did this by the creation of an unauthorized position, the Movement and Traffic Control Officer (MTCO). The MTCO was responsible to the commander for the move and was literally the absolute dictator of the roads. The MTCO's principal problems were to make effective use of all available combat support and to avoid congestion at critical points.

Communications to support operational movements was oriented by designating a signal axis of advance. Landline was used whenever possible but, extensive use was also made of radio and messengers. Movements were complicated by wartime damage and destruction. To identify possible problems it was necessary to supplement the map reconnaissance done by the G-3 with a route reconnaissance. Based on the route reconnaissance, the engineers would reinforce the route or identify bypasses. Air superiority reduced the importance of antiaircraft units.

The effectiveness of the U.S. Army at operational maneuver was

evidenced during the Battle of the Bulge. During this battle, the 1st Army cleared 196 convoys totaling 48,000 vehicles and 248,000 troops in 9 days from 17 December 1944. Likewise, XII Corps using only 2 roads moved 11,000 vehicles and 60,000 men over 100 miles in just 4 days. [156] As Russell Weigley pointed out, "At the close of World War II the United States Army was the mightiest in the world." [157]

SUMMARY

Sun Tzu stated, "Move when it is advantageous and create changes in the situation by dispersal and concentration of forces." [158] This lesson, true 2,500 years ago, held true during World War II. In reviewing the history of operational movements in World War II we find that the Wehrmacht, the Red Army, and the U.S. Army applied solutions that were remarkably similar. It is outside the scope of this research to designate which army had the best system and which army had the worse. The object was to examine the way combat support was used to conduct operational movements and then glean whatever contemporary implications occurred as a result.

The three armies were alike in many respects. Each army insisted that the commander had overall responsibility for the move and that he had to exercise effective command and control to protect the force and accomplish the mission. Effective command and control was heavily dependent on responsive communications. Likewise, the timely employment of reconnaissance was essential for the protection of the force and the conduct of the movement. The reinforcement of the route by engineers and the protection of

the column and key terrain by air defense elements were also necessary considerations.

Movement was a command and control operation and each army recognized the commander's ultimate responsibility. Operational commanders of two of the armies designated a special movements and traffic control officer to exercise overall supervision of the move. A post war evaluation of German armored traffic control found ample justification for this approach.

> The vital importance of properly organized and executed march and traffic control is apparent from German experiences during World War II. It seems obvious that traffic control in an armored division is the sole responsibility of the unit commander and his operations officer. Naturally, neither can be expected to personally direct these functions since at the time of the movement both are concerned with plans for the tactical commitment of the unit once its march objective has been reached. They can merely order what is to be done. The actual execution of the traffic plan is the function of the march and traffic control elements. [159]

In contrast, Soviet operational commanders appeared to exercise more centralized control than their counterparts in the German and U.S. Armies. The Soviets emphasized maintaining a column formation for as long as possible while the German and American commanders allowed greater freedom of action for their subordinates.

The commander's ability to communicate with his subordinates was crucial. While liberal use of radio communications simplified command and control and improved operational flexibility, it also multiplied the dangers of revealing valuable intelligence to the enemy. This brought about the imposition of radio listening silence as a necessary adjunct for both deception and survival. Surprisingly, wire communications were used extensively for control purposes and did not overly restrict operational

movements.

Reconnaissance and intelligence were critical elements of operational movements. The purpose of studying the enemy was to determine how he could oppose the accomplishment of the movement. Information was seldom complete, the enemy's intentions were often unknown, and assumptions about his capabilities had to be verified. The enemy's ability to detect operational movements meant that night travel was considered normal and concealment had to be enforced during halts. In that regard, the combat engineer was an essential part of operational maneuver. Camouflage and concealment, preparation of assembly areas, and route reinforcement were critical World War II battlefield missions for the engineers.

Vehicles in convoy represented high-value, hard to defend, easy-to-hit targets for enemy ground-attack aircraft. A high probability of air attack was assumed in planning any operational move. Both passive and active air defense measures had to be employed. In regards to air defense, the Americans had a significant advantage over the Wehrmacht and the Red Army. They enjoyed the luxury of not having to become overly concerned about the third dimension of the battlefield as they had air superiority.

The execution of operational maneuver was different in minor respects because each army's doctrine was based on a different history. They were alike for two reasons. First, there was the development in both the American and Soviet Armies of a common understanding and appreciation for the German doctrine of Blitzkrieg. Second, there was the military necessity of having to satisfy Clausewitz's enduring principles of speed and concentration.

Concentration was important for World War II commanders as the function of operational maneuver for each army was to position the mass of forces so

that they could strike at the decisive place at the decisive time. Speed was important, not just in regards to the time-distance factors, but also in regards to the decision cycle. A Soviet corps commander could expect to get o more than a day prior warning to conduct an operational move of his entire corps. In some cases he would get as little as four hours notice. To move a contemporary U.S. corps today may require an appreciably greater advance notice than this.

There is a reason for the difference between the ability of a Soviet corps, or for that matter a U.S. corps, to move in World War II and the ability of a contemporary U.S. corps to move today. Besides being an order of magnitude more deadly than the corps of 50 years ago, today's corps has not had much opportunity to conduct operational maneuver. But here again we have a event in history that is worth taking note of. In 1941, the U.S. Army conducted the Louisiana GHQ maneuvers.

The U.S. corps of World War II concentrated rapidly because it had the recent experience of other units to draw on. The experience gained in the 1941 GHQ maneuvers in Louisiana proved vital. In describing the benefits of those peacetime maneuvers, Dr. Christopher Gabel stated, "The Army learned lessons in transporting, maneuvering, administering, and supplying its forces in the field that nations such as France and the Soviet Union had just recently learned in the midst of bloody and desperate fighting." [160]

The Louisiana maneuvers were critical as it gave the future U.S. Army combat commanders of World War II an appreciation for the complexities of maneuvering large units. It served as the bridge between the theoretical and academic understanding these officers gained in the Command and General Staff School classrooms of the 1930's and the operational level moves that

would be conducted on the battlefields of Western Europe. The list of participants in the Louisiana maneuvers is a Who's Who of World War II commanders -- Mark Clark, Manton Eddy, Dwight Eisenhower, Millard Harmon, Walter Krueger, Lesley McNair, John Millikin, George Patton, Orlando Ward, and J. Lawton Collins, to name a few. [161]

As an aside, it was interesting to note that one of the manuscripts uncovered in the research for this project was The Concentration of Large Forces, A Lecture Given at the Army War College. This lecture was delivered to Army War College Command Course Number 3, on 1 March 1940, by MAJ J. Lawton Collins. Four years later this same major would find himself propelled to be the Commanding General, VII Corps, maneuvering and concentrating one of the legendary combat commands of World War II. What did he use as a teaching vehicle to add realism to his lecture? The Wehrmacht's concentration in preparation for the march into the Sudetenland. [162]

IMPLICATIONS FOR CONTEMPORARY COMBAT SUPPORT TO OPERATIONAL MANEUVER

Sun Tzu's adage, "Move when it is advantageous and create changes in the situation by dispersal and concentration of forces," [163] is as true today as it was in the past. From this, we can surmise that the lessons of World War II will have logical implications for contemporary combat support to operational movements. Contemporary maneuver warfare may not be very different from the battles fought by the Wehrmacht, the Red Army, and the U.S. Army during the latter stages of World War II. As in the past, the European battlefield would witness the operational maneuver of heavy forces,

engaged in large-scale battles in a fully industrialized and sophisticated area of the world.

Contemporary maneuver warfare is not significantly different from what it was in World War II. A brief comparison between operational maneuver during World War II and today was accomplished by COL Ted A. Cimral. Comparing the III (U.S.) Corps at the Battle of the Bulge and the III (U.S.) Corps of Exercise Certain Strike/REFORGER 87, COL Cimral found remarkable similarities between the two corps. [164]

COMPARATIVE DATA OF OPERATIONAL MANEUVER UNITS
III (U.S.) CORPS

	1944 BATTLE OF THE BULGE	1987 CERTAIN STRIKE
Divisions.....	3+	2+
Vehicles.....	11,800	11,000 [165]
Distance.....	250 km	150 km
Warning Order.....	96 hrs	72 hrs
Movement Begins.....	H-80	H-60
Routes.....	4	7 down 4
HN Restrictions.....	None	Several
March Unit.....	30 vehs (max.)	24 vehs (max.)
Vehicle Interval.....	50 m	50 m
March Unit Gap.....	3 min	5 min
Serial.....	1-5 march units	1-6 march units
Serial Gap (day).....	8 min	15 min
Serial Gap (night)....	8 min	30 min
Speed (day).....	25 mph	20 mph
Speed (night).....	15 mph	15 mph

Just as there are remarkable similarities between the III (U.S.) Corps of World War II and today, there are also some significant differences between the two. The current inventory of weapons and recent force modernization programs have introduced combat systems that are more

sophisticated, powerful, and lethal than ever before. Air mobility, tactical missiles, air defense characteristics, stand-off sensors, and the weight and fuel consumption of current equipment are among them. The M-1 Abrams Tank, M-2/3 Bradley Fighting Vehicle, the AH-64 Apache and UH-60 Blachawk helicopters, the Multiple Launched Rocket System, the Joint Surveillance and Target Attack Radar System, the Army Tactical Command and Control System, the Mobile Subscriber System, the Forward Area Air Defense System, and the Patriot air defense missile all give the contemporary corps capabilities that are at least an order of magnitude greater than the World War II corps. But these systems are more complex, heavier, have greater maintenance requirements and consume more fuel than the systems of their World War II counterpart. Thus an added burden is placed on the combat support systems that will conduct today's operational movements.

In today's setting, operational movements will be implemented by army groups and corps conducting campaigns to dislocate, disrupt, and disorient the opponent, to defeat his plan, and to effectively destroy his cohesion by maneuver rather than piece-by-piece with firepower. [166] To be effective, the operational commander will have to think in terms of time and space, the lessons of history, the lessons of theory, their contemporary implications and impact on operational art. In the chaos that will prevail in future wars, commanders must be able to rapidly shift their combat forces about the battlefield in order to concentrate and strike at the decisive point at the decisive time.

In this regard, movement is both a conceptual and a physical event. Conceptual in that the operational commander must be able to visualize what conditions he wants to achieve, how he will sequence events to go about

achieving those conditions, and how he will use his resources to set the terms of battle. This implies a broader dimension of time and space than tactics. Commanders of large units must have a clear understanding of what it is they intend to do with what they have available.

Movement is physical in that the commander must be able to take his warfighting machine, be it an army, corps, or even a division, and physically move it in time and space while being able to effectively exercise command and control in the process. In this regard, combat support will be a critical function for the success of an operational movement. As the III Corps Maneuver Handbook states, "Air defense, engineer support, and military police operations will have to be well coordinated in any corps movement, especially in the early days of combat before movement becomes routine." [167]

Concentration will be important in that the function of operational maneuver will be to position the mass of forces so that they can strike at the decisive place at the decisive time. Speed is important, not just in regards to the time-distance factors, but also in regards to the decision cycle. Like the Soviet corps commander who could expect no more than a few hours prior warning to conduct an operational movement, today's U.S. corps commander will be lucky if he gets eight hours warning. Unless he anticipates the movement well in advance and plans accordingly, or he is blessed with a staff that is trained to a very high order, it is improbable that the corps will be able to achieve the desired results in time. This will be the outcome, if for no other reason than that todays corps' subordinate units are not 100% mobile on organic transportation. To accomplish a corps movement would require moving by echelons, reusing

organic transportation assets, or obtaining extensive transportation augmentation from higher headquarters. The latter option would be no mean feat and the ensuing fog and friction would require considerable adjustment and innovation by an agile, informed, and experienced staff.

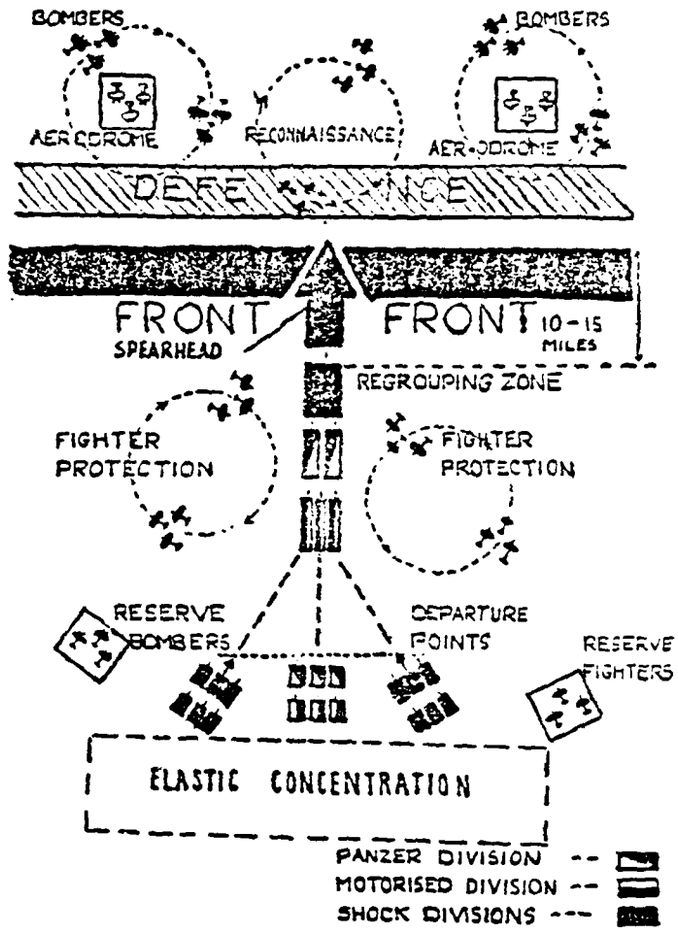
The ability of contemporary army staff officers to orchestrate the movement of large units is as much a concern today as it was in World War II. As in World War II, the U.S. Army today is reexamining the art of moving large units -- the operational art. It is being taught at the Command and General Staff College, the Army War College, and a large part of the curriculum of the School of Advanced Military Studies is devoted to this endeavor.

In a like manner, the Louisiana GHQ maneuvers of 1941 have a contemporary match. Between 11-23 September 1987, Exercise CERTAIN STRIKE - REFORGER 87, witnessed the III Corps from Fort Hood, Texas and NATO's, Northern Army Group, move approximately 80,000 soldiers, 20,000 wheeled vehicles, 2,200 tracked vehicles, and 700 tanks across northern Germany. [168] COL Ted A. Cimral commented on the exercise,

> The III Corps approach march in exercise REFORGER 87 compared favorably with the corps' approach march in December 1944, when it was ordered to wheel 90 degrees and relieve Bastogne. Striking similarities exist between then and now: number of vehicles, size of and gap between march units, serial size, vehicle interval, and rates of march. [169]

The lessons of World War II have contemporary implications. AirLand Battle doctrine has pointed us in the right direction. The appreciation for moving the heavy corps provided by MAJ Peter S. Kindsvatter was a first step in learning the art of operational maneuver. Hopefully, this is another step in that direction.

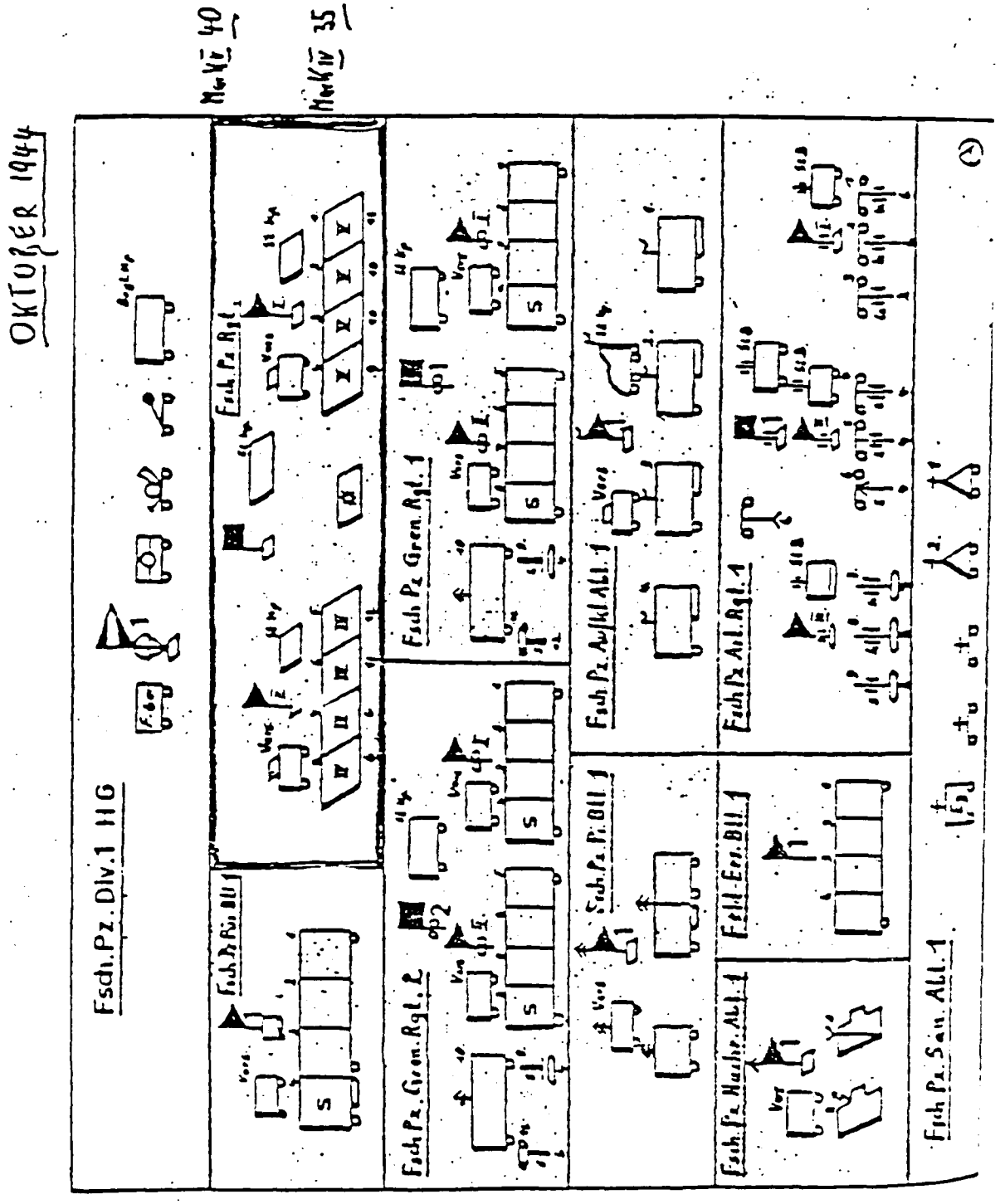
ENCLOSURE # 1



3. BLITZ TRANSPORT PLAN

MAJ Ferdinand Otto Miksche, Attack, A Study of Blitzkrieg Tactics (New York, New York: Random House, 1942), p. 56.

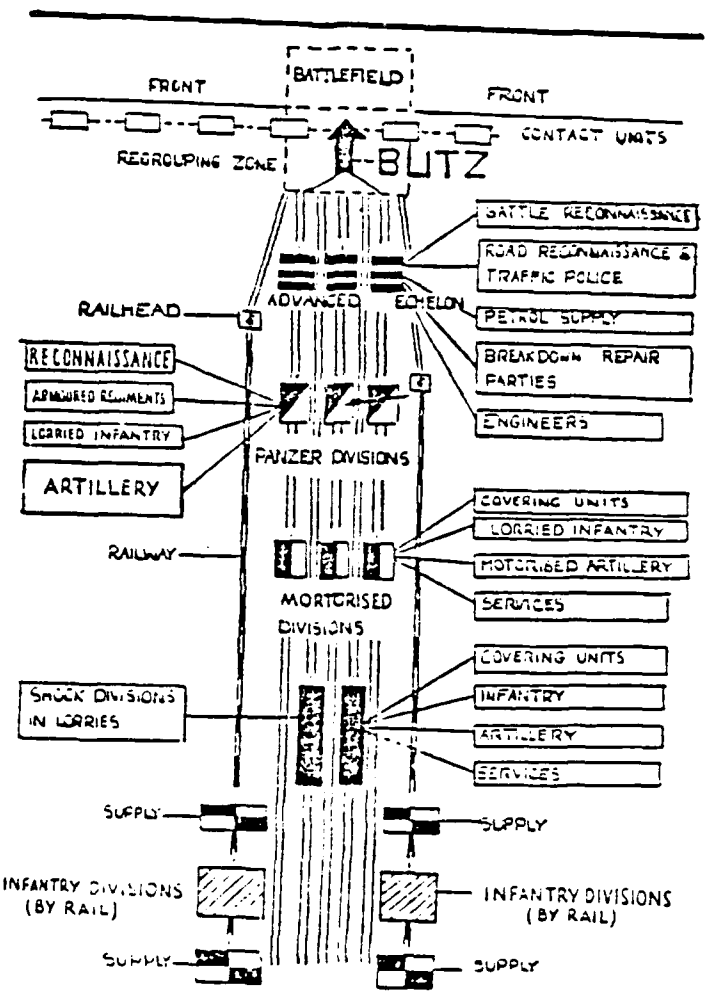
ENCLOSURE # 2



332. 1st Parachute Panzer Division "Hermann Goering" Organization, October 1944-January 1945

COL W. Hartelt, "Battle Report of a Panther Company of Panzer Division 'Hermann Goering.'" Readings in Soviet Operational Art, A 352, Fort Leavenworth, Kansas: U.S. Army Command and General Staff College (1987), p. 310.

ENCLOSURE # 3



4. BLITZ TRANSPORT PLAN: DETAIL

MAJ Ferdinand Otto Miksche, Attack, A Study of Blitzkrieg Tactics (New York, New York: Random House, 1942), p. 57.

ENCLOSURE # 4

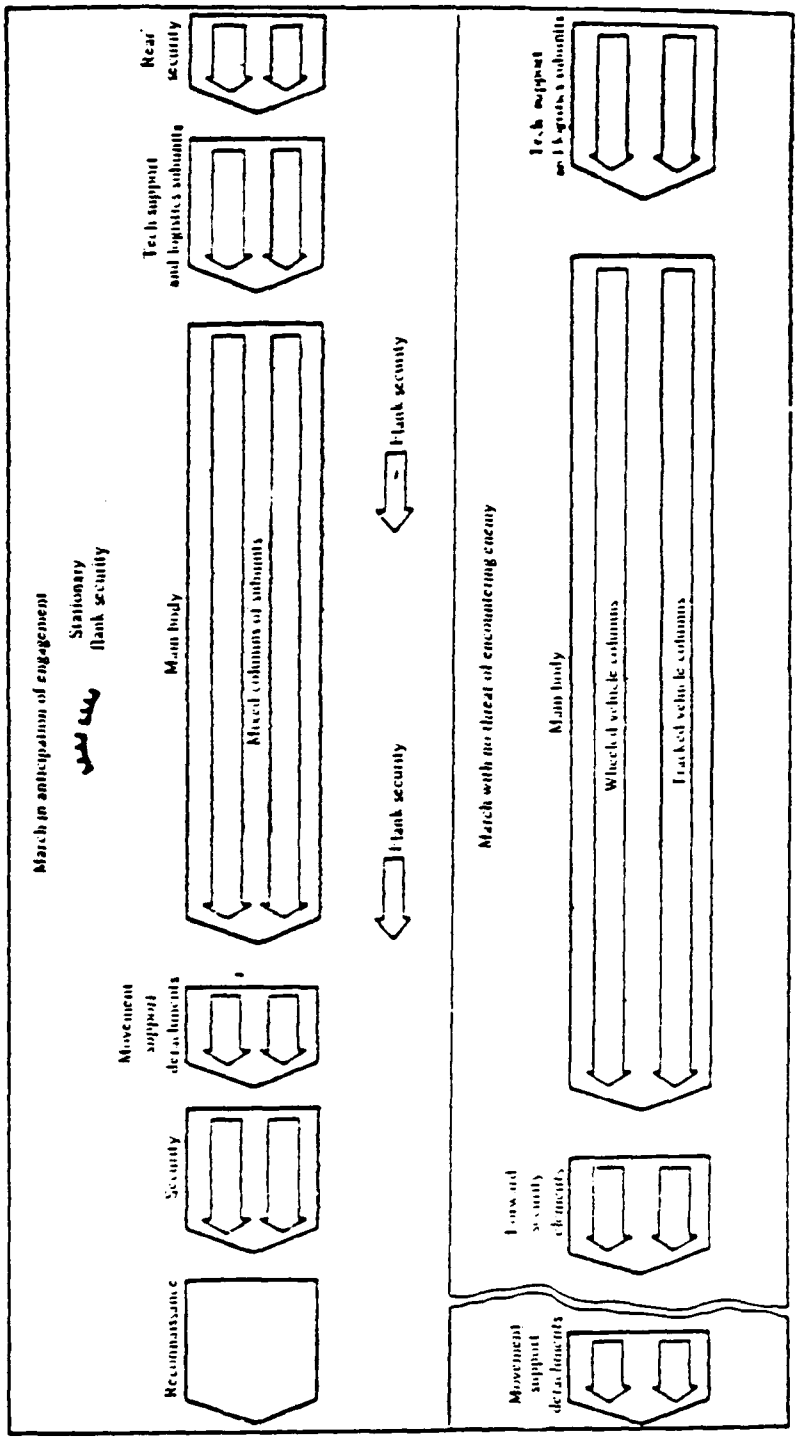
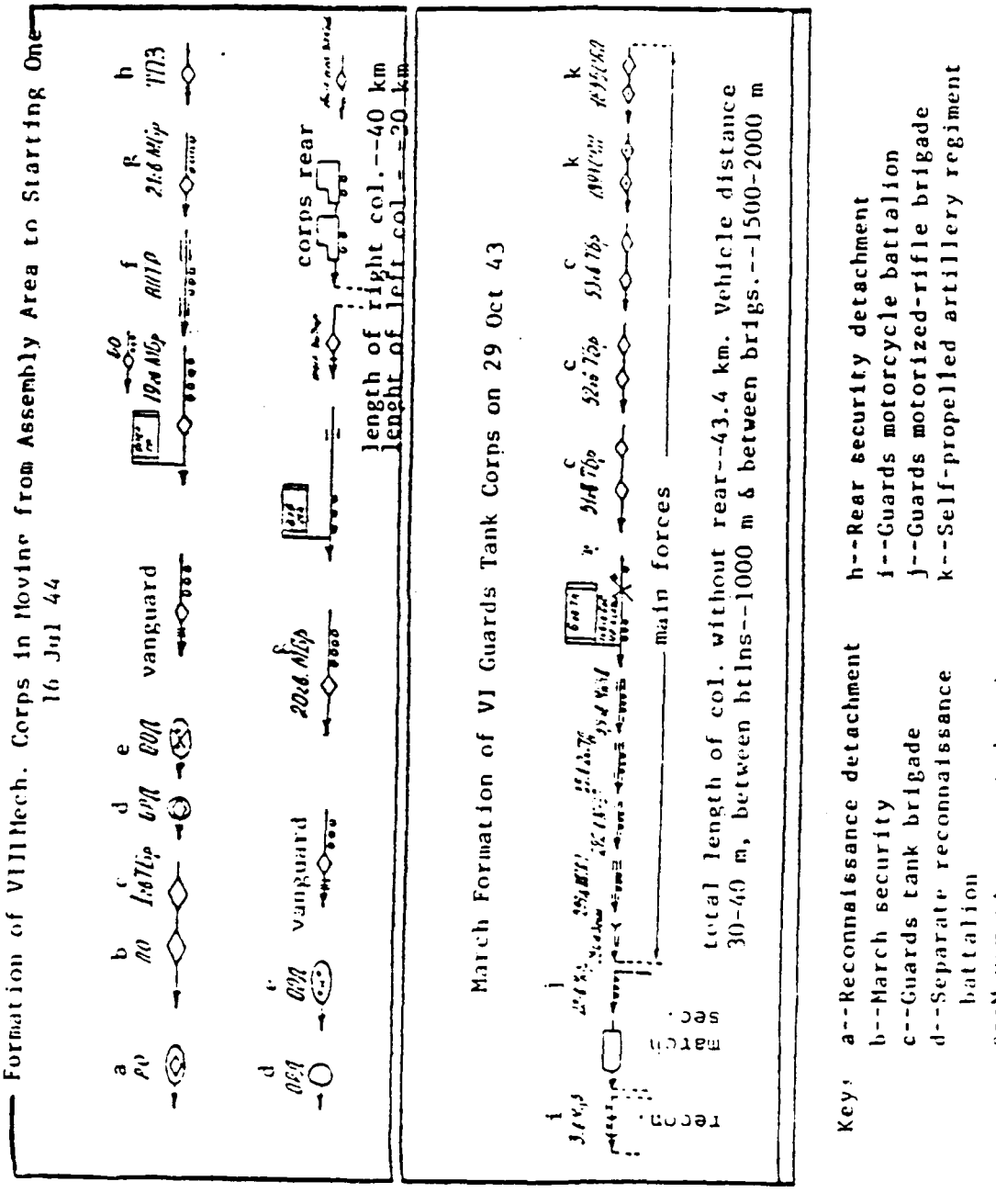


Figure 13. Troop March Formation.

V.G. Reznichenko, Tactics, A Soviet View. Moscow, U.S.S.R.: All Union Copyright Agency of the U.S.S.R. (Translated by the CIS Multilingual Section Translation Bureau, Secretary of State Department, Ottawa, Canada, 1984), figure 13, p. 241.

ENCLOSURE # 5



MG. I. Krupchenko, "World War II: Organization, Support of Tank Marches Described," Readings in Soviet Operational Art, A352, (January 1987), [Originally published in USSR Report: Military Affairs - Military History Journal (December 1984), pp. 18-25], p. 427.

ENCLOSURE # 6

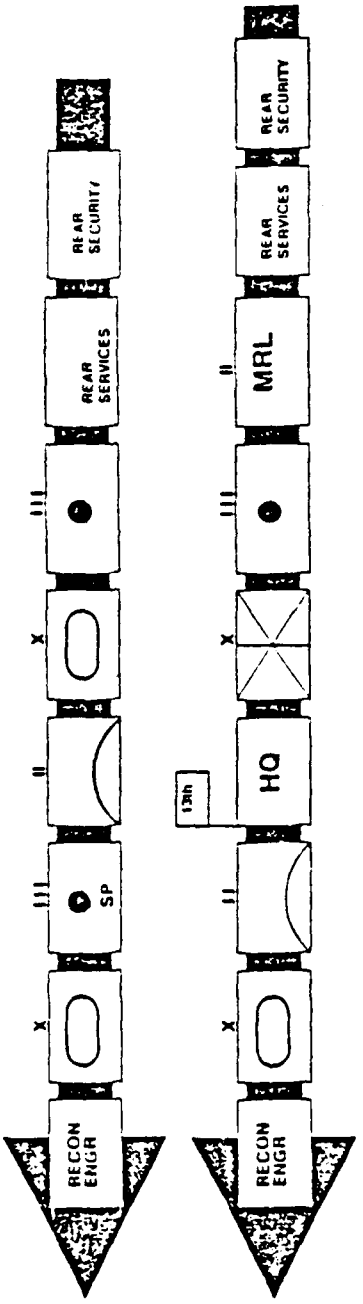


Figure 2.
13th Tank Corps:

LTC Richard N. Armstrong, "The Mobile Group Experience, The Soviets Appear to Be Still Refining Their WWII Tactics in Today's OMG." Armor, Vol. XCVI, No. 5 (September-October 1987), p. 25.

ENCLOSURE # 7

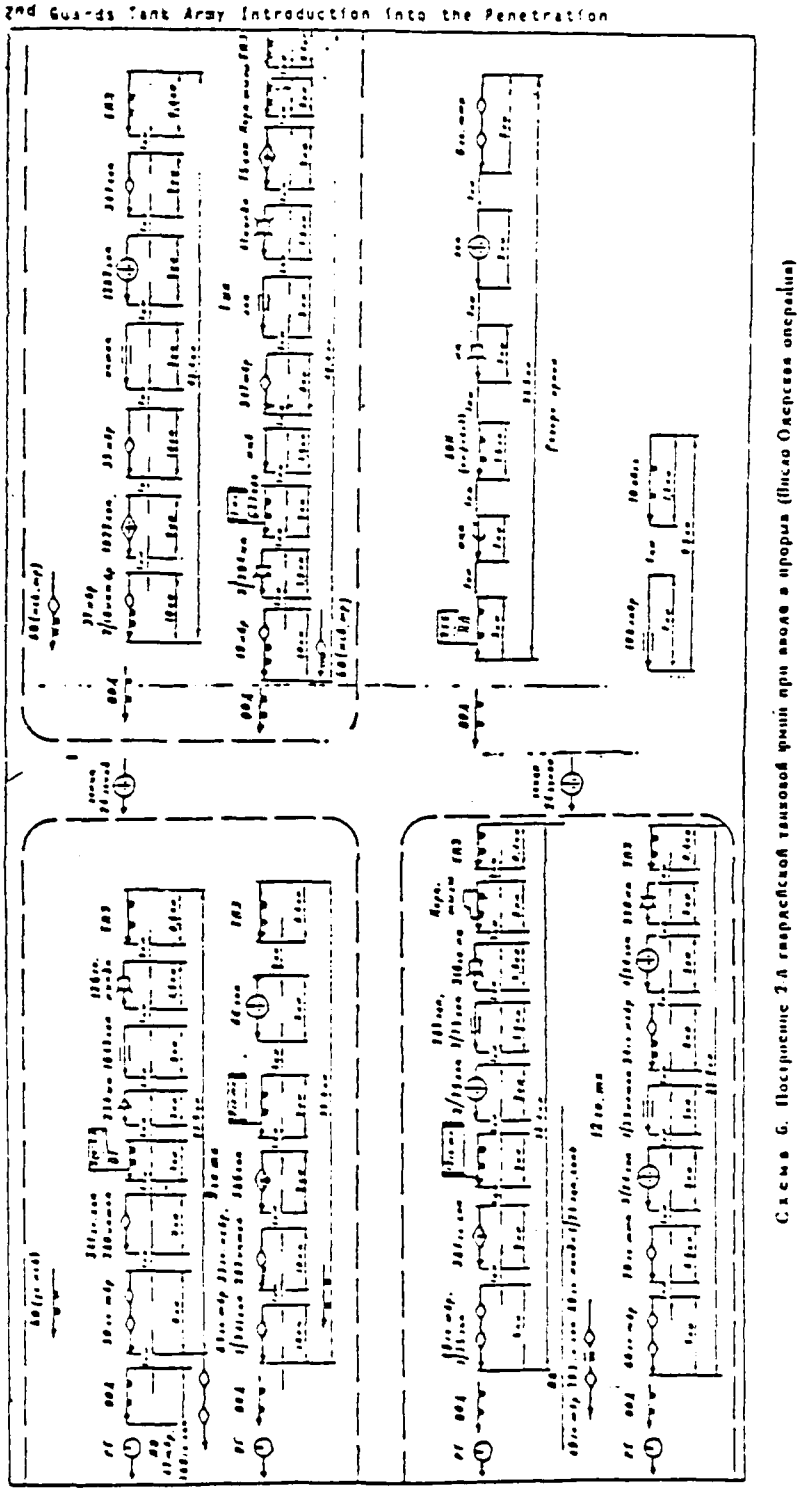


Схема 6. Построение 2-й гвардейской танковой армии при вводе в прорыв (Висло-Одерская операция)

COL David M. Glantz, "Overview of the Vistula-Oder Operation [12 January - 2 February 1945]." Readings in Soviet Operational Art, A352, Fort Leavenworth, Kansas: U.S. Army Command and General Staff College (1984), p. 216.

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6. This does not suggest that the British did not study the Germans' methods of warfare. Indeed, both J.F.C. Fuller and Basil Liddell-Hart were doing just that even before World War II began. However, I would suggest that the British displayed a methodical way of warfare that did not emphasize blitzkrieg techniques.

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9. Combat support is defined as fire support and operational assistance provided to combat elements and includes the following functional areas: artillery, military police, signal, military intelligence, engineers, air defense artillery, and chemical. See Department of the Army, FM 101-5-1, Operational Terms and Graphics, (1985), p. 1-16. The combat support functions involved in operational maneuver during World War II included command and traffic control, communications, intelligence, reconnaissance, engineers, and air defense. For the purposes of this paper, artillery is classed with infantry and armor as being a combat arm. Except for Hiroshima and Nagasaki, nuclear, biological, and chemical (NBC) warfare was not utilized during World War II, did not interfere with operational maneuver, and therefore is not considered in this study, despite the fact that it will more than likely be used in future wars.

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12. MAJ Don T. Riley, The Evolution of Operational Art - the Reconquest of Burma, 1943-1945 (Fort Leavenworth, Kansas: School of Advanced Military Studies, U.S. Army Command and General Staff College, 1987), p. 15. Information was also obtained from course comments made by COL L.D. Holder, Director, School of Advanced Military Studies, Academic Year 88/89.

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THE COMBAT SUPPORT ROLE IN OPERATIONAL MOVEMENTS
ANOTHER STEP IN LEARNING THE ART OF OPERATIONAL MANEUVER

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